

03050203-080
(North Fork Edisto River)

General Description

Watershed 03050203-080 is located in Orangeburg County and consists primarily of the lowest reach of the *North Fork Edisto River* and its tributaries from Caw Caw Swamp to its confluence with the South Fork Edisto River. The watershed occupies 49,830 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Johnston-Goldsboro-Noboco-Meggett-Dorovan series. The erodibility of the soil (K) averages 0.17; the slope of the terrain averages 2%, with a range of 0-6%. Land use/land cover in the watershed includes: 9.09% urban land, 27.40% agricultural land, 9.64% scrub/shrub land, 0.39% barren land, 33.89% forested land, 19.27% forested wetland (swamp), and 0.32% water.

This section of the North Fork Edisto River originates at the City of Orangeburg, and accepts drainage from Pen Branch, Anderson Branch, Whirlwind Creek, Dry Swamp, and Cooper Swamp before merging with the South Fork Edisto River. Whirlwind Creek flows through a 40 acre-lake used for water supply and as a county fish hatchery. There are a total of 63.3 stream miles in this watershed, all classified FW. As a reach of the North Fork Edisto River, this watershed accepts the drainage of all streams entering the river upstream of the watershed.

Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
E-007	P	FW	NORTH FORK EDISTO RIVER AT US 601 AT ORANGEBURG
E-007A	S	FW	N.FORK EDISTO R. AT POWER LINE CROSSING, 2 MI BELOW E-007
E-007B	S	FW	NORTH FORK EDISTO RIVER, 4 MI BELOW E-007 AT A CABIN
E-007C	P	FW	N. FORK EDISTO R. AT POLICEMEN CAMP, 6 MI BELOW E-007
E-008	P	FW	NORTH FORK EDISTO RIVER AT S-38-39, WSW OF ROWESVILLE
E-008A	W	FW	NORTH FORK EDISTO RIVER AT S-38-63

North Fork Edisto River - There are six SCDHEC monitoring sites along this section of the North Fork Edisto River, which was Class B until April, 1992. At the furthest upstream site (E-007), aquatic life uses are fully supported, but there is a significant increasing trend in turbidity and a very high concentration of chromium measured in 1996. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are fully supported but there is a significant increasing trend in fecal coliform bacteria concentration.

At the next site downstream (E-007A), aquatic life uses are partially supported due to pH excursions, compounded by significant increasing trends in pH and turbidity. In sediment, diethyl phthalate was detected in 1996, and P,P'DDE (a metabolite of P,P'DDT) was detected in 1997. Although the use of DDT was banned in 1973, it is very persistent in the environment. A significant increasing trend in pH suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

Further downstream (E-007B), aquatic life uses are partially supported due to pH excursions, compounded by a significant increasing trend in turbidity. Recreational uses are partially supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration. At the next site downstream (E-007C), aquatic life uses are fully supported, but there are significant increasing trends in total nitrogen concentration and turbidity. Recreational uses are fully

supported at this site. A significant increasing trend in dissolved oxygen concentration and a significant decreasing trend in total phosphorus at both E-007B and E-007C suggest improving conditions for these parameters.

At E-008, aquatic life uses are fully supported based on macroinvertebrate community data, but there were occurrences of zinc in excess of the aquatic life acute standards, a very high concentration of copper measured in 1996, diethyl phthalate detected in 1994, bis(2-ethylhexyl)phthalate detected in 1997, and a significant increasing trend in turbidity. In sediment, high concentrations of lead were measured in 1995 and 1996, a high concentration of mercury was measured in 1995, a very high concentration of mercury was measured in 1996, and a very high concentration of lead was measured in 1997. Also in sediment, di-n-butylphthalate was detected in 1995, P,P'DDD and O,P'DDE were detected in 1994, and P,P'DDE was detected in 1994, 1995, and 1996. Recreational uses are fully supported at this site.

At the furthest downstream site (E-008A), aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at E-007 and E-008A, they were typical of values seen in such systems; however the increasing trend in pH at E-007A suggests changing conditions for that portion of the stream. Natural conditions likely contributed to the pH excursions seen at E-007A and E-007B.

A fish consumption advisory has been issued by the Department for mercury and includes the streams within this watershed (see advisory p.31).

Permitted Activities

Point Source Contributions

RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD) COMMENT	NPDES# TYPE LIMITATION
NORTH FORK EDISTO RIVER ALBEMARLE CORP./ORANGEBURG PIPE #: 001 FLOW: 0.991 WQL FOR NH3-N, TRC	SC0001180 MAJOR INDUSTRIAL WATER QUALITY
NORTH FORK EDISTO RIVER CITY OF ORANGEBURG WWTP PIPE #: 001 FLOW: 9.000 WQL FOR NH3-N, TRC	SC0024481 MAJOR MUNICIPAL WATER QUALITY
NORTH FORK EDISTO RIVER GREENWOOD MILLS, INC./LINE PIPE #: 001 FLOW: 0.0003	SC0001163 MINOR INDUSTRIAL EFFLUENT
NORTH FORK EDISTO RIVER CITY OF ORANGEBURG/PEARSON WTP PIPE #: 001 FLOW: 0.35	SCG641002 MINOR DOMESTIC EFFLUENT
NORTH FORK EDISTO RIVER SOUTHSIDE APARTMENTS PIPE #: 001 FLOW: 0.03	SC0029751 MINOR DOMESTIC EFFLUENT

NORTH FORK EDISTO RIVER
 ORANGEBURG SAUSAGE CO.
 PIPE #: 001 FLOW: 0.0072
 WETLAND; WQL FOR NH3-N, DO, TRC, BOD5

SC0030066
 MINOR INDUSTRIAL
 WATER QUALITY

NORTH FORK EDISTO RIVER
 FASHION FABRICS OF AMERICA
 PIPE #: 001 FLOW: 0.5917
 WQL FOR NH3-N, TRC

SC0043419
 MAJOR INDUSTRIAL
 WATER QUALITY

NORTH FORK EDISTO RIVER
 COUNCIL ENERGY
 PIPE #: 001 FLOW: M/R
 WETLAND; WQL FOR BOD5

SC0045560
 MINOR INDUSTRIAL
 WATER QUALITY

DITCH TO NORTH FORK EDISTO RIVER
 ORANGEBURG NATIONAL FISH HATCHERY
 PIPE #: 001 FLOW: M/R

SC0047023
 MINOR INDUSTRIAL
 EFFLUENT

DITCH TO NORTH FORK EDISTO RIVER
 ORANGEBURG NATIONAL FISH HATCHERY
 PIPE #: 002 FLOW: M/R

SC0047031
 MINOR INDUSTRIAL
 EFFLUENT

COOPER SWAMP
 SILVER LAKE FARMS HATCHERY
 PIPE #: 001 FLOW: M/R

SC0044067
 MINOR INDUSTRIAL
 EFFLUENT

WHIRLWIND CREEK
 EDISTO HIGH SCHOOL
 PIPE #: 001 FLOW: 0.017
 PIPE #: 001 FLOW: 0.021 (PROPOSED)
 WQL FOR NH3-N, DO, TRC, BOD5

SC0040185
 MINOR DOMESTIC
 WATER QUALITY
 WATER QUALITY

Water Supply

WATER USER (TYPE)
WATERBODY
 CITY OF ORANGEBURG (M)
 NORTH FORK EDISTO RIVER

REGULATED CAPACITY (MGD)
PUMPING CAPACITY (MGD)
 36.0
 44.6

ALBEMARLE CORP.-ORANGEBURG PLT. (I)
 NORTH FORK EDISTO RIVER

1.44
 1,000 GPM

Growth Potential

There is a low to moderate potential for growth in this watershed. The western portion of the City of Orangeburg is located in this watershed and U.S. Highway 601 connects it to the Towns of Bamberg and St. Matthews. The U.S. Highway 21 corridor runs from Orangeburg to the Town of Rowesville and is paralleled by a rail line.